JUN 15 1932

SCIENCE NEWS LETTER

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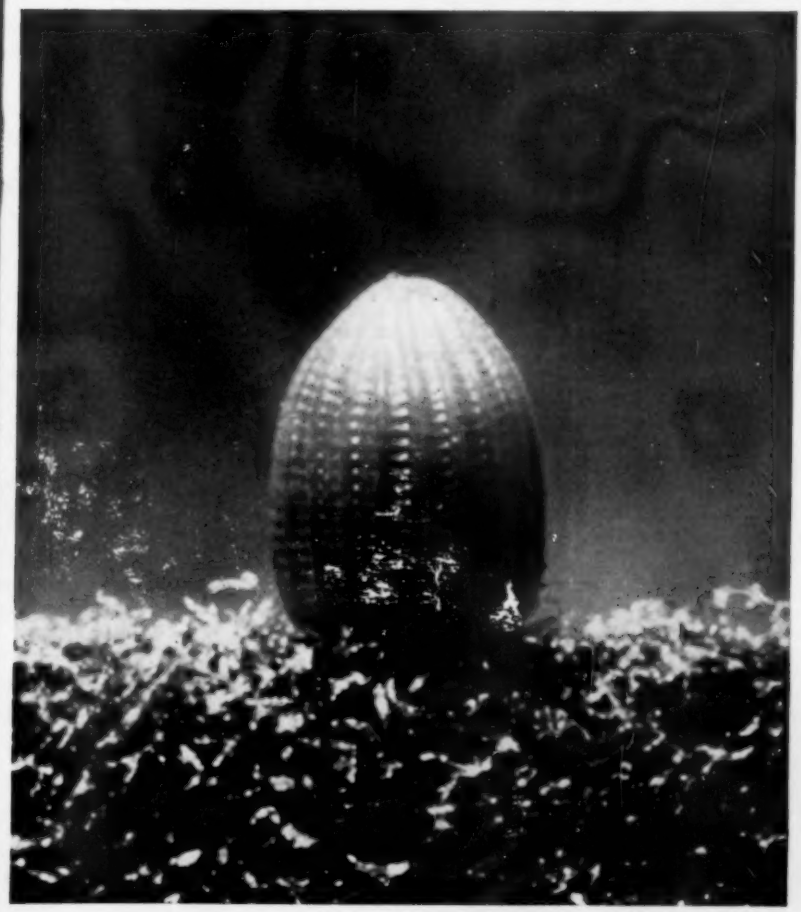

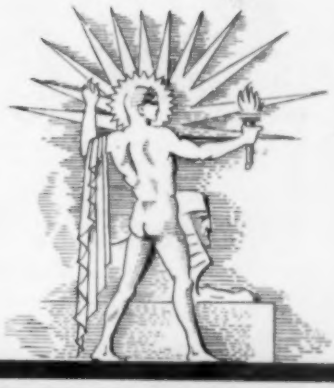

JUNE 11, 1932

Domed Nursery of a Flying Jewel

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VOL. XXI *No. 583*

The Weekly Summary of Current Science

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The Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Edited by WATSON DAVIS

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? DO YOU KNOW THAT ?

Los Angeles, with 50,000 cows in its metropolitan area, claims to be the largest farm city in the world.

To defeat illegal traffic in egret feathers, in Florida, the National Association of Audubon Societies plans to increase its staff of wardens in that state.

An industrial chemist of Boston has suggested the use of cotton fabric in constructing Mississippi River levees.

During an alfalfa weevil outbreak in Utah, 45 species of birds attacked the pest, according to the U. S. Bureau of Biological Survey.

The new federal food label for canned goods, "Below U. S. Standard, Low Quality But Not Illegal," means that the contents are wholesome but may be of irregular sizes, or otherwise not highly attractive.

It has been reported that diabetes is five times as prevalent among Jews as among Gentiles.

The first bird conservation law known was enacted by Moses nearly fifteen hundred years before Christ.

How to make cast-iron ring, so that bells could be made from it, was once known to the Chinese, but has now become a lost art.

The life of a single hair on a human head is estimated at six to ten years.

Idaho is announced as the first western state to combat bovine tuberculosis successfully.

A 70-pound python under observation ate a 20-pound pig at one huge meal, enough food to keep up its energy for a year.

WITH THE SCIENCES THIS WEEK

CURIOSITY-AROUSING questions are prepared concerning the most interesting and important news in each issue. These questions should be a mental stimulant for the adult reader and a boon to the teacher who uses the Science News Letter to add zest to her classroom instruction.

Book reference in italic type is not the source of information of the article, but a reference for further reading on the subject of the article. Books cited can be supplied by Librarian, Science Service, at publisher's price, prepaid in U. S.

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Are toads poisonous? p. 373

MEDICINE

Colds Lasting Only Few Days Give Three Months Immunity

Study of Common Cold in Isolated Communities From Tropics to Arctic Disproves Widely-Held Beliefs

THE COMMON COLD lasts only three or four days. People who tell you they have "had a cold all winter" have really not been suffering from a cold but from some secondary infection, Dr. Wilson G. Smillie, professor of public health administration at Harvard University, told the Conference of State and Provincial Health Authorities of North America. Dr. Smillie's report covered studies of the common cold in four isolated communities: a "moonshine" village in southern Alabama; Labrador; Spitzbergen, the northernmost inhabited point; and the island of St. John in the Virgin Islands, which was the original of Stevenson's Treasure Island.

In all these places contact with the outside world was very limited and Dr. Smillie and associates were able to trace the course of cold epidemics from their very start. Colds are contagious and are spread by direct contact, they found. In Spitzbergen there were no colds from a period in November, soon after the last boat left, until the day after the first boat arrived the following spring. The miners in this community of 500 persons lived in very hot, humid barracks, went out into extreme cold and wind every morning, worked all day in mines where the temperature was below freezing, and came back to the hot barracks at night. Such conditions would seem ideal for the development of colds, and the fact that none developed disproves the commonly held opinion that exposure to drafts, bad weather and similar environmental factors is a cause of colds.

When the first boat arrived in May, the scientists went out to it and examined the people on it before they disembarked. One man was coming down with an acute cold. The same day the mailman from Spitzbergen went to the boat and he caught the first cold in the community. Within thirty-six to forty-eight hours the community was practically incapacitated by a severe outbreak of colds, Dr. Smillie reported. The same sort of thing was observed in the other communities. In the tropics, however, colds were very mild and without complications such as sinus infections, bronchitis, ear infections and pneumonia. It is these complications which caused the prolonged periods of discomfort and actual illness in the temperate zones and which, except in the case of pneumonia, are generally considered the cold itself.

While colds proper last only three or four days, they seem to pave the way for these secondary infections. Likewise, one cold gives immunity for three months, Dr. Smillie said. If you have just recovered from a cold, you cannot possibly get another for three months. You can, however, have recurrences of the secondary infections, which may make you think you are having one cold right after another. The average person gets only two real colds a year.

Dr. Smillie and associates in their investigations tried to find in the noses and throats of cold patients the organism causing the cold. They were unable to find, during the first three or four days, any of the well-known germs. The agent causing colds, however, has been shown by two other groups of workers to be a filterable virus, Dr. Smillie pointed out. Vaccines for colds are of course not made from this virus but from the germs of some of the secondary invaders. Consequently they cannot prevent the development of a cold, but it is theoretically possible for them to prevent the development of some of the secondary and equally distressing infections.

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MEDICINE

Home-Made Gymnasium For Paralysis Victims

A HOME-MADE gymnasium for exercising the fingers and arms of patients recovering from infantile or other types of paralysis has been designed by Dr. Taisia Stadnichenko of the U. S. Geological Survey. It may be made with material purchasable at any hardware or five-and-ten-cent store.

Massage is helpful to paralyzed arms and hands, but not sufficient, Miss Stadnichenko points out. The exercise board requires the use and coordination of most of the arm and hand muscles.

The board is 30 inches long, 7 inches wide and has a shelf 36 inches long. It can be clamped to a bed or table. Screwed to this board are such articles as a screen door spring, bird's cage spring, sash lock, cupboard latch, cupboard catch, barrel bolt, drawer pull, utility hook, snap switch, and knife switch. Manipulation of these common articles requires the use and control of various muscles and helps to strengthen them.

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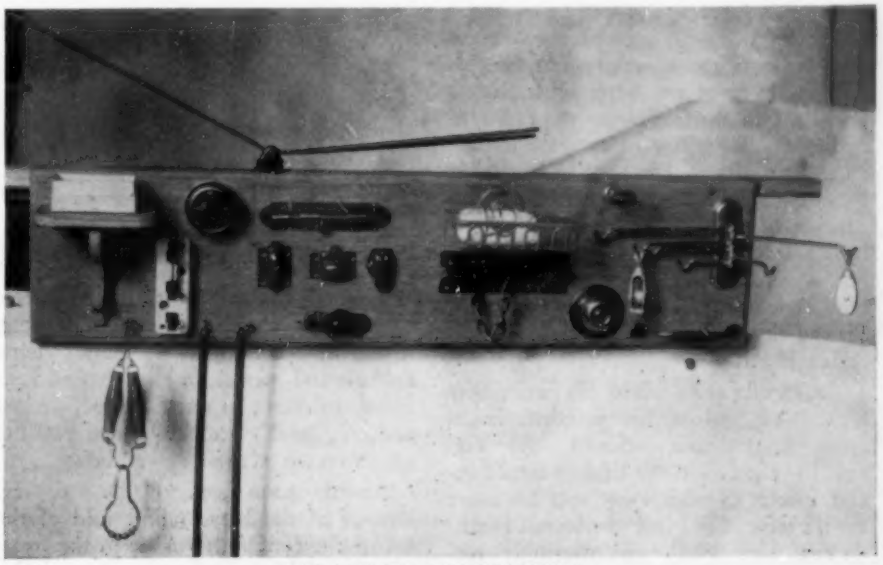

PARALYSIS GYMNASIUM

Ten-cent store hardware supplies the articles needed for exercising muscles of patients.

ASTROPHYSICS

Dust From Andean Eruptions Reducing Solar Radiation

DUST from the Andean volcanic eruptions of last April, drifting around in the upper atmosphere, is causing trouble for the Smithsonian solar observatory at Montezuma, in northern Chile, where daily observations are made of the sun's radiation. This information was given to Science Service by Dr. Charles G. Abbot, secretary of the Smithsonian Institution.

Established at Montezuma because its high desert atmosphere contained a minimum of dust and very little water vapor to interfere with the transmission of solar radiation, this observatory has been virtually out of commission since the latter part of April, because the high clouds of dust prevent good recording by the radiation-measuring instruments.

The first visible sign of trouble, Dr. Abbot said, was the appearance of a "mackerel-sky" effect around the sun. This was not due to ordinary clouds, but to high-floating dust. There have also been fiery red sunsets, such as were seen in the northern hemisphere after the explosion of the Alaskan volcano Katmai in 1912. The diminution of the radiation as measured by the instruments at Montezuma has not been constant, but there have been frequent recurrences of this falling-off in the amount of energy received.

Similar effects were observed by Dr. Abbot himself in Algeria after the Katmai eruption. At that time the noonday radiation reaching the earth's surface was reduced by as much as twenty per cent.

Although the after-effects of the Andean eruptions have been marked in South America, they have not been detected, even in slight degree, north of the equator. Dr. Abbot does not expect that the dust clouds will cross the equator; and Prof. W. J. Humphreys of the U. S. Weather Bureau concurs in this opinion.

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PSYCHIATRY

Nerves and Sex Give Students Most Problems

NERVOUS breakdowns and sexual problems cause more college students to need psychiatric advice than other difficulties they encounter.

This is shown in a study of one thousand college student cases made in connection with the University of California psychiatric services by Dr. Sidney Kinnear Smith of Oakland, Calif.

Dr. Smith found that every year about the same proportion of students in college need such help, and that more freshmen and sophomores ask for advice than juniors and seniors. Sexual aspects of life appear to be given more consideration and speculation at the college age than at any other time. Sexual problems in their relation to the student's social life are of extreme importance, he said. Psychiatric treatment brought about the greatest degree of improvement in the sexual maladjustments, but there were marked improvements also in the other types. Of the total thousand cases, over half were improved by psychiatric treatment, Dr. Smith reported.

In treating the student, his personality is studied and if his problem arises from social maladjustments, the psychiatrist tries to fit the student into a social group in which he will be more comfortable. For cases of nervous breakdowns, Dr. Smith unhesitatingly recommends psychoanalytic treatment.

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PHYSIOLOGY

Use of Sugar Regulated by Adrenal Gland Secretion

THE CHIEF function of the vital adrenal glands is to regulate the body's use of sugar, Dr. S. W. Britton of the University of Virginia Medical School declared at the session of the Federation of American Societies for Experimental Biology in Philadelphia.

These glands secrete two very powerful hormones: the familiar adrenalin, and cortin, which is now saving the lives of patients suffering from the once fatal Addison's disease. The part of the gland that secretes cortin is necessary to life. Dr. Britton thinks that it is through its control of the sugar metabolism that the cortex exerts its vital influence.

A group of investigators who produced an extract of adrenal gland cortex, Drs. Frank A. Hartman, Katharine A. Brownell and Julia E. Lockwood of the University of Buffalo, reported experiments showing that their extract is necessary for the activity of various tissues of the body. This extract helps animals and men suffering from adrenal gland deficiency to resist fatigue, toxins, and cold, and gives the human patients an increased sense of well-being.

At the same session, Dr. C. H. Greene of the Mayo Clinic told of the use of the cortical hormone in the treatment of Addison's disease. He and Dr. L. G. Rountree have been making a careful study of 32 patients who have been under treatment for two years.

The substance in liver effective in treating pernicious anemia is either absent from or present in low concentrations in the liver of the patient suffering from pernicious anemia, Drs. A. C. Ivy, O. Richter and M. S. Kim of Northwestern University Medical School reported. When liver extract is given to pernicious anemia patients, the patients' livers became saturated quite rapidly with the active substance, however.

The Northwestern University investigators were able to make these discoveries, which bear importantly on the cause of the disease, as the result of an unusual opportunity in which they had human liver extracts, from patients who had received varying amounts of ordinary liver extracts, to work with. Extract made from the liver of the pernicious anemia patient who had received 42 ounces of a potent liver extract was successful in treating other pernicious anemia patients.

In another study, the same investigators found evidence that the substances stimulating the glands of the stomach to secrete the digestive juices may be of the nature of hormones and also of secretion-stimulating substances called secretagogues.

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ICE AGE GRASS PULLER

The tip of the mammoth trunk as it would naturally hang. The lower part is the lip, well-adapted for grasping; the upper shows in cross sections the two air passages exposed when the tip was broken away from the main part of the trunk.

CHEMISTRY

Insulin Crystals Studied With Long-Wave X-Rays

THE CRYSTAL form of insulin, secretion of the islands of Langerhans in the pancreas which regulates the body's use of sugar, has been studied by means of long-wave X-rays.

Prof. G. L. Clark of the chemistry department of the University of Illinois has just reported his findings on this subject to *Physical Review*. X-ray photographs of crystals give scientists a picture of the internal arrangement of the atoms in the crystal. Such studies have been made of other crystals. One of the first to be investigated this way was the familiar sodium chloride, which is common table salt.

With the X-ray investigation and microscopic data, Prof. Clark found the crystal form of insulin to be monoclinic, with one angle between 88 and 90 degrees. The individual crystals frequently assume a pseudo-hexagonal form. There were 26 molecules per unit cell.

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PALEONTOLOGY

Only Mammoth Trunk Tip Ends Wanderings in Museum

Mummified Tissue That Once Adorned Center-Table Is Now Studied by Russian Scientists in Leningrad

THE TIP of the trunk of an ancient wooly mammoth, that wandered the wastes of Siberia in the long-past ages when Crô-Magnon artists made pictures and modeled statues of his cousins in the caves of southwestern Europe, has been acquired by the Zoological Museum of the Academy of Sciences at Leningrad after a curious and checkered history.

About eight years ago, a hunter belonging to the Tungus people in Siberia found a well-preserved mammoth trunk in the frozen soil on the bank of the Bolshaya Baraniha river in the Kolima district of Siberia. Vast areas of soil in that country have been frozen for thousands of years, and in this great natural refrigerator the remains of mammoths and other animals have more than once been found. But until the Tungus hunter found this trunk, no man since the Old Stone Age had ever seen the proboscis-tip of one of these ancient animals.

The mammoth trunk passed from hand to hand. Some one cut the tip off and kept it, throwing the rest away. The tissues had dried and hardened; it was in a fair state of mummification. After knocking about the country as a curio for several years, it came into the possession of a Mrs. Kondratiev, of the city of Sredne-Kolomsk. She kept it on her center-table for a while, and then sent it to the Museum in Leningrad. It was seen there recently by Dr. Eugene Golomshtok of the University of Pennsylvania Museum.

Dr. C. Flerof, assistant curator at the Museum, finds that while the trunk-tip has a general resemblance to that of the modern Indian elephant, there are certain significant anatomical differences, which may be considered adaptations to a different mode of living. The "lip," at the extreme end tapers gradually to form a finger-like appendix, without any abrupt contraction. This appendix is much longer and wider than that of any modern elephant species, and gives the entire tip a two-lobed appearance. Dr. Flerof considers it an organ excellently adapted for grasping, enabling the animal to pluck large bunches of grass or moss with greater ease than would be possible to the Indian and African elephants of today, which feed mostly on leaves of trees and shrubs.

The original hairy covering has long since disappeared, but microscopic examination shows where hairs of two sizes were once rooted. There was no hair on the inner surface or on the appendix.

In addition to its paleontological interest, the trunk-tip confirms anew the keen power of observation of the ancient cave men, as well as their ability as accurate draftsmen. The bilobed structure of the tip as represented in European cave drawings has always puzzled archaeologists, and some of them were inclined to attribute this shape to inaccuracy in drawing. Now an actual specimen shows that these old Crô-Magnon artists were right.

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EUGENICS

Women Marrying Late Likely to be Childless

WOMEN delaying marriage to a late age are more likely to be childless than are women of the same age group who married earlier in life, if there is any parallel between the reproductive ability of laboratory mammals and the human species, Dr. W. L. Wachter, associate professor of biology at Lafayette College, told a meeting of the Eugenics Research Association.

In his study of laboratory mammals, Dr. Wachter found that in families tending to large numbers of offspring, a delay in mating made little difference, but where there was a natural inherited tendency to small families, delayed mating favored complete sterility. The loss averaged one third of an offspring per female in addition to the loss due to advancing age itself.

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ARCHAEOLOGY

Cretan "Church" Older Than Christianity

With the Cross as a Symbol Cretans Worshiped 1200 Years Before Christ in Edifice Much Like Modern Church

By EMILY C. DAVIS

THEY HAD CHURCHES in ancient Crete. Churches like Christian places of worship, with altars and choir stalls and chancel screens.

In fact, a modern Sunday morning church-goer might feel surprisingly at home if, by some Einstein trick of time and space, he found himself alive 3,500 years ago and standing in a temple to the Mother-Goddess of Crete.

This first evidence that churches are older than Christianity has been discovered by Sir Arthur Evans, noted British archaeologist who has given thirty years of his career to digging up the marvelous civilization of the island of Crete in the Mediterranean Sea.

It was Sir Arthur who revealed that Crete had a brilliant civilization many centuries before the Golden Age dawned in Greece. Sir Arthur and his workers brought to light the Palace of King Minos of Crete, as artistic and as comfortable a royal residence as any ruler could desire.

Sir Arthur, patiently clearing away the earth from palace walls, found paintings showing that ladies on the Isle of Crete, 1,600 years and more before Christ, wore flounced skirts, wasp waists, and decollete gowns. The British archaeologist uncovered wall paintings showing that Crete was the land of dangerous bull-grappling contests long before Spain took to bull-ring sports.

The Greatness That Was Crete

At every turn of the spade has come new evidence that men and women of Crete were sophisticated, intelligent, and with it all deeply religious. Their king was a priest who served the great Mother Goddess of Crete. The king's lovely palace was a combined residence and temple. Even the sports in the bull-ring where agile youths and maidens leaped over the heads of bulls, were religious festivals in honor of the great Goddess. Throughout the ruins that Sir Arthur has uncovered, he finds everywhere in the wall paintings and art objects the symbols that reminded devout Cretans of their religion.

But it is something new to find that the pagan religion of this island evolved independently the style of architecture that we think of as typically Christian.

The discovery of the Cretan church was made, as so many archaeological discoveries are, through accident. A gold ring was the start of the adventure, and a small boy who lives on the island of Crete was the starter. The boy was working in his father's vineyard, not far from the ruins of King Minos' Palace at Knossos, when he spied a shiny object. He picked the object out of the dirt and held in his hand a heavy gold finger ring. The ring was a massive seal engraved with two scenes representing the Goddess of Crete journeying in a boat to a sanctuary, and receiving refreshment at the end of the journey. Rings as handsome as this have been used throughout history as royal ornaments and tokens.

The valuable ring has since mysteriously vanished.

Royal Ring Was Clue

But to Sir Arthur Evans, who, of course, heard about the discovery, the appearance of a royal ring in a vineyard was much more than a dramatic incident that ended mysteriously. Archaeologists are among the keenest detectives of science. Sir Arthur studied the scene of the discovery and set about connecting ring and vineyard with long-ago events and places.

It was probable, he reasoned, that robbers laden with plunder from some nearby house or tomb dropped the ring in flight. The vineyard, he observed, lay in a hollow of a hillside. On either side of the hollow, sharp limestone bluffs jutted out. In just such locations the people of ancient Crete had often set their buildings. Their great palace at the capital city of Knossos was set on top of a hill, and some of the rooms were fitted into contours of the hillside, like basement rooms. Hillsides offered good sites for tombs, too, in the Cretan estimation. And the resting place of the priest-kings of Crete had never been found.

So, when the archaeologist had completed his work of restoring the Palace of Minos, he brought workmen to the vineyard where the ring was discovered, and they began to trench into the edges of the limestone bluffs.

Hopes of finding new ruins were rewarded. After weeks of patient digging, the workmen excavated buildings that had stood on and in the hill. And Sir Arthur realized that another of his expectations had come true. For he had believed that the royal tomb of the kings of Crete would be a temple-tomb, befitting rulers who were also priests.

Above ground, on the hillside, a small temple had stood. Beneath the temple, like a basement, the tomb was cut into the rock of the hill slope. And on this lower, "basement" level were other rooms. There was a pavilion where memorial feasts could be held. There was a courtyard where funeral sports could take place, and a roof-terrace above, from which spectators could look down upon the athletes.

Painted Sky for the Dead

The burial chamber itself was planned with care. Glistening white gypsum was effectively used on the walls and as material for a central pillar. Overhead were heavy cross-beams of cypress wood, originally decorated with colors. And between the roof beams, the rocky ceiling was painted a brilliant Egyptian blue to convey to the dead a vision of the sky.

When Sir Arthur came into this tomb of the priest-kings, all the burials except one had been removed. The island of Crete was shaken more than once by sharp earthquakes in ancient times, and robbers were not slow to seize such chances to loot the unguarded treasures of royalty.

The one burial which remained for the archaeologists to examine was in a state of disorder. This was, Sir Arthur believes, the grave of one of the last sons of the House of Minos. Robbers had carried off precious metal objects, leaving only such things as a globular flask, an incense-vessel brightly painted, an alabaster bowl.

In the entrance passage of the tomb, Sir Arthur found the skull and some bones which belong almost certainly to this grave. This late prince of the dynasty was an elderly man of athletic training, judging by what anthropologists can read in the skeletal remains.

A little way beyond the tomb of the

priest-kings, the expedition struck the stones of another building, the residence of the priest who had been guardian of the tomb. And in this residence is the architectural feature which is as surprising as any discovery made in buried Crete.

The priest-warden had built in his home a private chapel so like our modern churches that it is difficult to believe it could have been planned two thousand years before Christ, and for the worship of a pagan goddess.

Pagan temples have commonly had altars, as churches do. But in any pagan temple the differences from church architecture are far more striking than the likenesses. That is, archaeologists would have said so until the Cretan priest's chapel came to light.

How strangely the people of Crete anticipated church arrangements may be seen by comparing the Cretan chapel point for point with a modern church. Take, for example, the beautiful Bethlehem Chapel in the National Cathedral at Washington.

Same Plan as Modern Chapel

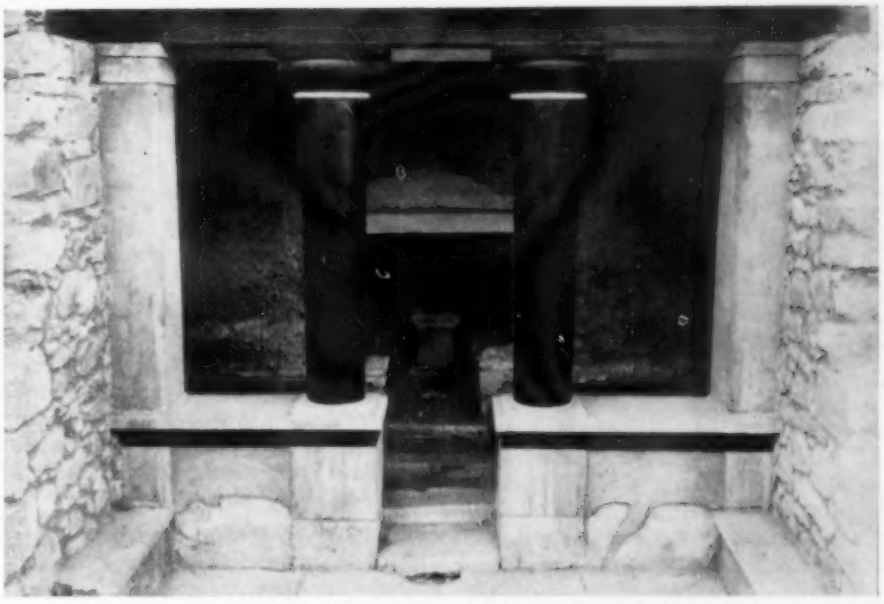
The Bethlehem Chapel, in fourteenth century Gothic style, is more elaborate than the simple chapel of the Cretan priest. But the plan is very similar. Both chapels have a chancel where the rites are conducted, screened off from the nave where observers may sit or stand. In both chancels, the altar is at the center, flanked by two columns. Steps lead up to the altar in both chapels.

The choir stalls, where those taking part in the service may sit, are inside the chancel in the Bethlehem chapel. In the Cretan chapel the choir stalls were benches just outside the chancel.

There was a chancel screen fitted between columns and wall in the Cretan chapel to accentuate the division between the inner shrine and the outer place of worship. Such chancel screens are common in modern churches. Bethlehem Chapel happens not to have one. If it had one, the screen would be placed where the rails stand, at the chancel front.

The little chapel in the priest's residence is today a bare, swept room. But when the priest lived there to guard the tomb and to conduct the games and feasts at the temple, the chapel was undoubtedly furnished richly. Some of these furnishings would add to the "churchly" look of the place.

Crosses, for example, were among the religious symbols of Crete. What the cross suggested to the minds of people in ancient Crete is not certainly known. Archaeologists think that probably the four arms of the square cross suggested the four directions, north, south, east and west. The man or woman of Crete looking at the square cross thought, perhaps, of the power of their Goddess and how it spread to all the earth.



TO THE MOTHER GODDESS OF CRETE

A modern Christian might easily feel at home in this 3,100-year-old temple.

Sir Arthur Evans once collected a group of articles he found in shrines on the island of Crete, and arranged them as he thought a priest of the Goddess might have prepared an altar. In the center of the altar he placed a polished cross of white and gray marble, about nine inches in diameter. On one side, he set the image of the great Goddess herself, with high headdress and arms outstretched to hold the serpents that symbolized her control of the underworld. On the other side, he placed a figure of a priestess also holding serpents.

Dragonflies for Immortality

In front of the square cross, he set a stone bowl which would hold the water used as a symbol of purification. Tall lamps he ranged on either side, and rows of sea shells were placed as a border. Shrines of Crete were often adorned with these shells which the people brought from the beaches. Dragon-fly figures were among the smaller objects which the Cretans used to inspire religious thoughts. So Sir Arthur placed on the altar several dragon-fly images, symbols of immortality.

The marble cross, of all the old emblems of the Cretan religion, has attracted the curiosity and attention of modern inhabitants of Crete. Sir Arthur wrote, following his finding of the Cross, that no votary of Minos' times could have regarded this cross with greater veneration than did the orthodox Greek pope whose parish included the remains of King Minos' Palace-Sanctuary. The marble cross, Sir Arthur added, did much to confirm the views of the flock that the fresco figures found in Cretan ruins were icons of saints of old.

Yet the civilization of Crete was wiped out in a catastrophe—probably an earthquake — 1,200 years before Christ. And there is no apparent connection between the crosses and churches of pagan Crete and the crosses and churches of Christianity.

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Science News Letter, June 11, 1932

Eating apple peelings is good nutrition economy, for the peel contains six times as much Vitamin C as the pulp near the core.

A glacier in the crater of the extinct Armenian volcano, Mt. Alages, 15,000 feet above sea level, has been discovered by a Soviet geographical expedition.

Because there is no standard definition for "pickle," a national packers association is writing its own scientific definition, hoping it will become standard.

PHYSICS

First Photograph of Liquid Helium Made by Canadians

THE FIRST photograph of liquid helium to be taken was shown to members of the Royal Society of Canada by co-workers of Prof. J. C. McLennan of the University of Toronto, who secured it during experiments at temperatures near the absolute zero.

The pictures were taken at just two degrees Centigrade above absolute zero and showed that the surface of this extremely cold liquid helium has a peculiar nature. Prof. McLennan and his associates, H. D. Smith and J. O. Wilhelm, discovered hitherto unnoticed changes in the appearance of the liquid helium, as it passed from one modification to another at its triple point, the temperature at which solid, liquid and gas can exist side by side.

The depths of the temperature scale, corresponding to below minus 450 degrees on the familiar Fahrenheit scale, were explored in these experiments at the University of Toronto in order to test the Raman effect on liquid helium. This is the discovery for which the Hindu scientist, Prof. C. V. Raman, received the 1930 Nobel prize. He found that intense light of a single color is partly changed to other colors when it passes through various transparent substances.

Prof. McLennan found that the Raman effect for liquid helium corresponded to the theoretical value. The experiments were performed in the same laboratory in which helium, the non-inflammable elemental gas, was first liquefied in America.

Science News Letter, June 11, 1932

GENETICS

Experiments Produce Two New Hybrid Animals

REPORTS of two new types of hybrid animals, representing successful crosses between quite diverse parent stocks, have been reported to *Nature*. The first is a cross between eland and domestic cattle, reported by Dr. Ernest Warren, of the Natal Museum in South Africa. The eland is a big antelope, reaching a maximum weight of about a ton; it has long, straight horns with twisted ridges on them. Cattle and antelopes both belong to the order of hoofed mammals, but have never been considered close relatives. There have been reports of crosses between them in the past, but up until the present full authentication has been lacking. In Dr. Warren's hybrid the characteristics of the domestic cattle predominate.

The second strange hybrid is reported from Moscow, where M. M. Zavadovsky has succeeded in crossing the Indian humped cattle, or zebu, with the long-haired Tibetan yak. The zebu is closely related to domestic cattle, but the yak, though a relative also, is rated as a separate genus by zoologists. Mr. Zavadovsky has also crossed with a zebu bull the zebu-yak hybrid cow that resulted from the first experiment; and in further breedings has crossed zebu-yak hybrids with a hornless yak male.

The first-generation of zebu-yak hybrids are colored like the yak parent, but do not have the long "fringe" of hair that is characteristic of the yak. Their horns are different from those of either parent, and the muzzle is intermediate but nearer the zebu.

Science News Letter, June 11, 1932

INVENTION

Weighing Machines "Go Talkie" in Europe

WEIGHING machines at the corner drug store or delicatessen may soon be announcing your weight in the mellifluous tones of a master-of-ceremonies, instead of merely pointing a finger at a figure, or handing you a printed slip with the latest news from the avoirdupois front, a "fortune" and the picture of your favorite movie queen.

Such machines have already been invented in Europe, R. W. Smith, chief of the section on weights and measures of the U. S. Bureau of Standards, told the network audience of the Columbia Broadcasting System in a talk arranged under the auspices of Science Service.

Mr. Smith visioned a possible extension of the "talkie" weighing machine idea to include the detection of slugs and counterfeit coins dropped in by over-thrifty but under-honest persons. After telling how various machines now test every coin dropped into them in as many as ten different ways, he suggested that instead of simply rejecting the false coin as most of them do, a "talkie" weigher might courteously thank a patron for an honest penny but reprove him in loud and raucous tones if he tried to palm off a dishonest one.

Science News Letter, June 11, 1932

IN SCIENCE

GEOGRAPHY

Mile Sounding Increases Depth of Deepest Lake

NEW DEPTH records have been set by Lake Baikal, in Siberia. Long famous as the deepest lake in the world, the greatest depths that had hitherto been found were recorded as 4,642 feet; these are now surpassed by a sounding of 5,306 feet, a little over a mile, made by a recent hydrological expedition. Considerable areas of this great fresh-water inland sea were found to be over 4,800 feet deep.

The expedition also found a sunken mountain range running across the lake from east to west. If it were only a little higher, Baikal would be two lakes instead of one, for the water over its top is not more than six or eight hundred feet deep.

Science News Letter, June 11, 1932

GENETICS

Double Jointed Thumb May Show Paternity

CAN YOU bend your thumb backward as well as forward at the second joint?

If so, you have probably regarded it as useful only as a parlor trick to amuse nephews or other young people. It may, however, serve a serious useful purpose. The study of the inheritance of this odd ability adds another item to the known list of hereditary human traits following the Mendelian law. It can also serve to determine questions of paternity, Leon F. Whitney, geneticist of New Haven, Conn., told a meeting of the Eugenics Research Assiciation.

It is not known how many persons have this ability, but it is much smaller than the number whose thumbs can bend in only one direction, he said. He found in studying the families of those who have the ability, that it is not always handed down by parents who have it to all their children, but that it may skip a generation and follows the pattern of a typical Mendelian recessive trait.

Science News Letter, June 11, 1932

CE FIELDS

PSYCHOLOGY

Psychiatrist Explains Nudistic Movement

THE UNDERLYING cause of the nudistic movement which has gained many followers in Europe and America was explained by Dr. Sandor Lorand of New York City in an address before a joint meeting of the American Psychiatric Association and the American Psychoanalytic Association.

Adherents to this cult have founded colonies in which clothes are entirely dispensed with and the sexes mingle freely. They believe this will lead to better physical and mental health.

Dr. Lorand based his explanation of the movement on cases in which he has given psychoanalytic treatment. The nudistic movement, he said, may be looked upon as a compensation to many persons for having to repress certain tendencies which society will not tolerate. Since the movement itself is partially tolerated by society, it helps to keep the participants from developing neurotic symptoms. It is just one external manifestation of the general changes being attempted in the whole structure of social life and morals and which center around the problem of sexuality.

"The outcome of the much emphasized aim of the nudistic movement, health and enlightened sex education, especially for the young, may be very dubious," declared Dr. Lorand. "But unmistakably, nudism serves as a means of gratification and compensation for the one who practices it."

Science News Letter, June 11, 1932

ASTRONOMY

New Evidence Against Mythical Planet Vulcan

A NEW NAIL has been driven into the coffin of the mythical planet Vulcan by Dr. H. von Klüber, of the Astrophysical Observatory at Potsdam. Vulcan was once supposed to revolve around the sun in an orbit within that of Mercury. Such a body would never be seen in the night sky, but would be visible either when it passes in front of the sun, or during a total eclipse, when the bright solar disc is temporarily hidden by the moon, and faint objects in the same part of the sky are made visible.

In May, 1929, Prof. Erwin Freundlich, director of the Einstein Tower at Potsdam, photographed the eclipse of the sun visible in Sumatra. Though made for other purposes, his plates showed such a profusion of star images that Dr. von Klüber decided to examine them carefully to make sure that Vulcan was not concealed there. For purposes of comparison photographs of the same part of the sky, but without the sun, were made six months later, with the same telescope, set up at Potsdam. If a planet were present, it would betray itself by its motion between the time of the two exposures.

The search proved conclusively that there is no planet as bright as the ninth magnitude, considerably below naked eye visibility, up to a distance of 40 minutes from the sun. This is approximately equal to one and a third solar diameters. Closer than this the bright solar corona, visible at eclipse time, might have made faint objects invisible, but even there, Dr. von Klüber believes, a planet as bright as the seventh magnitude, also too faint to be seen with the naked eye, would have been found.

Science News Letter, June 11, 1932

ENTOMOLOGY

Butterflies, "Winged Jewels", Are Gems at Start of Life

See Front Cover

BUTTERFLIES have been called "winged jewels" so often that the conceit can hardly be considered poetic any longer. Yet the appropriateness of the old metaphor receives new confirmation when we look at the egg of a butterfly, which represents the humblest beginning of its career of beauty. For this tiny nursery, whence the young caterpillar, unwinged and unlovely, will presently creep, is itself exquisitely jewel-like in its proportions and symmetry and in its delicate sculpturing.

Seen in magnification, without any of our common grosser objects to present a dwarfing size-scale, as Cornelia Clarke's camera has pictured it for the cover of this issue of the SCIENCE NEWS LETTER, the egg of a common Monarch butterfly on its milkweed leaf looks like the dome of an Eastern palace rising above a fantastic forest in Fairyland.

Science News Letter, June 11, 1932

PSYCHIATRY

Criminals Prefer Jail To Insane Asylums

THE AVERAGE criminal prefers to go to jail for a definite sentence rather than to be committed to an institution for the treatment of mental disease, Dr. William Nelson, director of the psychiatric child guidance clinic of St. Louis, told the American Psychiatric Association.

"Contrary to popular opinion," said Dr. Nelson, "offenders do not invoke 'insanity' as an 'excuse' for their crime. An investigation conducted over a five-year period reveals the fact that over 70 per cent. of individuals committing misdeeds prefer to go to a penal institution for a specific period rather than to be committed to a mental disease institution indefinitely, where they know they are likely to remain until in the judgment of the psychiatrist they are able to again to meet community social demands."

Science News Letter, June 11, 1932

ZOOLOGY

Toads Poisonous When Bitten, Not When Biting

SHAKESPEARE'S characterization of the toad as "ugly and venomous" may have a good deal more accurate zoology in it than it has been given credit for. Not that toads have a deadly bite like serpents, but that they are sometimes seriously poisonous when bitten, or even when handled.

Evidence along this line is brought forward in a new Smithsonian Institution monograph. In it there is one account of a Mexican toad whose poison was fatal to a terrier that pounced on the batrachian and shook it to death, and had a paralyzing effect on a large police dog that merely touched it with his nose. The terrier's master, M. E. Musgrave of the U. S. Biological Survey, was made dizzy and ill, though he had not touched the toad, while he was examining his dying terrier.

Toad venom, states Dr. Remington Kellogg of the Institution staff, is secreted by two different types of glands, and seems to be divided into two corresponding classes. That from the belly glands is a narcotic alkaloid, acting on the nerves. The secretion from glands on the back and shoulders is acid and acts as a convulsive.

Science News Letter, June 11, 1932

PHYSIOLOGY

Great Men's Brains Not Larger But Have Better Blood Supply

THE DIFFERENCE between a scholar's brain and that of the ordinary man is not size or weight but blood supply and composition.

This is the conclusion drawn from studies reported to the American Psychiatric Association, by Dr. Henry H. Donaldson of the Wistar Institute of Anatomy and Biology, at Philadelphia.

Dr. Donaldson studied the brains of scholars, including those of G. Stanley Hall, Sir William Osler and Edward S. Morse, and compared his findings with similar studies of brains of ordinary hospital patients.

In his address he asked the psychiatrists to imagine before them the brain of a scholar, and one by one Dr. Donaldson took up the anatomical features of this imaginary brain, just as he had studied them in real brains in his laboratory. The weight of this superior brain and of its different parts was no different from that of persons of low grade mentality, Dr. Donaldson pointed out. Careful measurements of the area of the brain surface also showed no difference between brains of superior and inferior mentality.

But when Dr. Donaldson examined the part of the brain containing the chief vessels that supplied it with blood, he found a great difference. In the brains of scholars this part was always well developed, showing that the brain was unusually well nourished. The brain with a better food supply works better, as does a muscle with better blood supply and better nourishment, he reasoned. Even the best of brains makes a poor showing in a fainting individual in whom most of the blood has been withdrawn from the brain, he pointed out. Since nourishment of the brain appears to be the factor influencing its better functioning or causing greater mental ability, the composition of the blood as well as the amount of it supplied to the brain must be important. Further studies along this line are needed, he said, but much progress has already been made.

Science News Letter, June 11, 1932

RADIO

The Science Service radio address next week will be on the subject,

FIGHTING INSECTS WITH POWDER AND LEAD

Prof. A. L. Melander

Head of the department of biology of the College of the City of New York

FRIDAY, JUNE 17

at 2:45 P. M., Eastern Standard Time

Over Stations of

The Columbia Broadcasting System

ENTOMOLOGY

'Hoppers Will Cause Much Damage in Western States

WIDESPREAD damage from grasshoppers all over the West is expected by the Bureau of Entomology, U. S. Department of Agriculture. The insects are hatching rapidly in great numbers throughout the Plains area, and outbreaks have already been reported as far east as Iowa and Missouri. As yet the pests are in their earlier stages of growth; it is after full size and appetite have been attained that their most serious inroads on crops occur.

This year the Bureau of Entomology lacks sinews of war. An appropriation was asked from Congress, but was not granted. Hence the burden of the fight has been transferred to the localities affected. In most states at least some money has been raised by the various counties for the purchase of materials for poison bait, and the states supply technical advisers for organization and methods of combat. The Bureau itself has collected much data on grasshopper outbreaks and how to handle them, and this has been made available to the forces in the field.

Since the fight has been left to state and local agencies, it is expected that efforts will be uneven; necessarily determined by the amount of money available. South Dakota, hard hit by agricultural troubles during the past decade or more, will probably be able to do less than some of her more fortunate neighbors; but in all the states there are certain counties where the money needed for the grasshopper war cannot be found in sufficient amounts. These unfortunate communities will not only suffer most from their burden of 'hoppers this summer, but will carry over an increased stock of eggs into 1933, and thus serve as centers for trouble next year, unless severe winter weather or other natural factors fight on the side of the farmer instead of against him.

Science News Letter, June 11, 1932

PHYSIOLOGY

Python, Cold-Blooded, Becomes Warm at Times

SNAKES, though cold-blooded and actually below the temperature of the surrounding air most of the time, can warm up appreciably under suitable circumstances. This was strikingly demonstrated by measurements made on the body temperature of a female African python while she was incubating a "sitting" of eggs.

The study was made as part of a larger research on the physiology of large reptiles, under the direction of Dr. Francis G. Benedict, director of the nutrition laboratory of the Carnegie Institution of Washington at Boston. The results of this research will be issued in the near future in monograph form.

The temperature of the maternal python while she was trying to hatch her eggs was 93 degrees Fahrenheit, not very much below that of warm-blooded animals, while the surrounding air had a temperature of only 86 degrees. Normally, however, the temperature of a snake is not even as high as that of the surrounding air. It has been assumed for years that cold-blooded animals were always just as warm or just as cold as the atmosphere.

Science News Letter, June 11, 1932

The Immense Distances of the Fixed Stars were not proved until

NEWTON

Studied them in connection with his work on gravitation in the solar system. His deductions will form the

NEXT CLASSIC OF SCIENCE

MECHANICS

The Air Brake

"A Classic Invention"

On the First Air-Brake's Maiden Trip It Saved the Life Of a Farmer Whose Horse Balked in Front of the Train

IMPROVEMENT IN STEAM-POWER BRAKE DEVICES. George Westinghouse, Jr., of Schenectady, N. Y. U. S. Patent No. 88,929, *April* 13, 1869.

MY INVENTION relates to the construction of power car-brake for railway-cars or other like vehicles, to be operated by compressed air or other elastic compressible fluid; and the nature of it consists, first, in the use of an auxiliary engine for compressing the air in reservoir, from which it is to be conducted by suitable pipes and applied to operating the brakes, and also for pumping feed-water into the boiler, either or both; second, in the construction of a reservoir for storing up the power to be derived from air or other elastic fluid under compression, such reservoir having a pipe or pipes leading to one or more brake-cylinders on or attached to each car, with a valve or cock in each pipe for turning on or off the supply of air; third, in the construction and combination of devices by which the power thus communicated to the piston of the brake-cylinder may be from it applied to operating an ordinary hand-brake, or any other known form of simple or compound brake; fourth, in the construction of an improved coupling for uniting the brake-pipe of contiguous cars, so made that when coupled they shall be always open for the passage of air to the brake-cylinders, but if uncoupled, when the brakes are down, the pressure of the air in the pipes will instantly close them. . . .

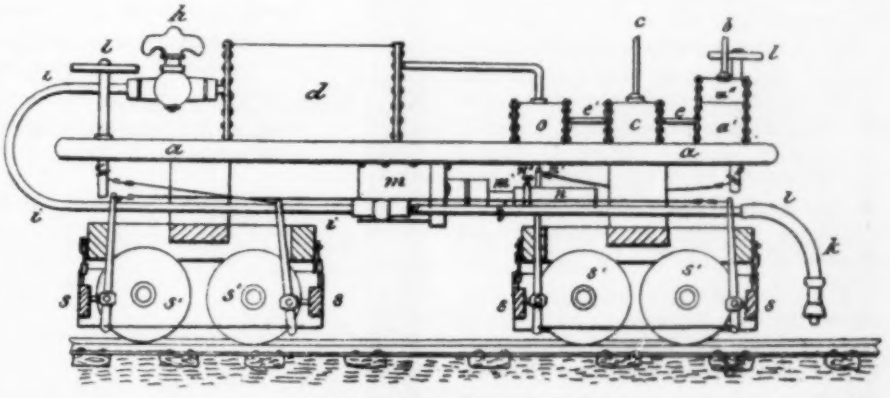
Advantages

The particular advantages connected with the apparatus described, in addition to those above referred to, are, that the brakes are under the control of the engineer, and can be instantaneously applied at any time, and with any degree of power within the strength of the machinery employed, and the brakes can be as instantaneously loosened. They are simple in construction, cheaply made, and can be applied to and used in connection with or used without the ordinary hand-brakes. By the use of the auxiliary engine the operation of the brakes is made independent of the operation of the locomotive, so that much or little power can be stored up in the reservoir *d* at any time, whether the locomotive be running fast or slow, or not at all; and, if desired, all the force of the air-pump can be applied to the brakes over and above the force than can be stored up in the reservoir. By this mode of operating brakes in connection with the couplings described, in case of accident the brakes may be instantaneously applied, and kept "on" till the whole train, or each separate car, if the car-couplings break, be brought to a complete stand. . . .

IMPROVEMENT IN STEAM AIR-BRAKES. George Westinghouse, Jr., of Pittsburgh, Pa. U. S. Patent No. 124,405, *March* 5, 1872.

My present invention relates to sundry improvements in steam-power air-brakes for railway use. In such brakes, as heretofore commonly used, an auxiliary steam engine, arranged on the locomotive by means of an air-pump, compresses air into a main reservoir. A pipe leads from this back under the cars, and by a branch-pipe from it to a brake-cylinder under each car. The compressed air is applied to a piston, the steam of which, directly or indirectly, actuates the ordinary brake-levers. The pipes are coupled together between the cars by couplings, the valves of which are automatic in their operation; and these couplings are arranged as described in Letters Patent granted to me August 8, 1871.

I now propose further to improve this system of railway brakes, first, by providing each car with an auxiliary reservoir, which shall be filled from the main reservoir; second, by such connections from each such auxiliary reservoir to the brake-cylinder of each car that, in case of the rupture of the main reservoir or of any of the brake-pipes, the brakes will be applied by means of compressed air from such auxiliary reservoir; third, by a double pipe-connection from the main reservoir to the brake-cylinder of each car with such intermediate connections, that either or both pipes may be in use at once for conveying compressed air, or, if either is broken at any point, communication with it will be automatically closed, and the other will perform all necessary functions; fourth, by such valve and port connections between the brake-pipes and the brake cylinders, that one brake pipe may, while the brakes are off and the train is running, be kept full of compressed air from the main reservoir, and so constitute, mechanically, a continuous reservoir from one end of the train to the (*Please turn page*)



AIR-BRAKE ON A CAR

A represents a platform-car, on which is mounted an auxiliary engine, a′ a″, a feed-water-pumping cylinder, c, and an air-pump, o, and an air-reservoir, d. (Drawing accompanying Patent No. 88,929.)

other; fifth, by bringing this continuous reservoir-pipe into communication with the brake-cylinders at pleasure, through the agency of compressed air admitted from the main reservoir into the other brake-pipe; sixth, by such construction and arrangement of intermediate devices that, by simply discharging compressed air from this continuous reservoir-pipe, a communication will be opened from the auxiliary reservoir to the brake-cylinder, whereby the brakes will be applied; seventh, by a system of valves and ports, which shall effectuate all these results by their automatic action, except as their action is governed by the engineer at the main reservoir.

Science News Letter, June 11, 1932

PSYCHOLOGY

Intelligence Tests Not Good For Measuring Immigrants

INTELLIGENCE tests now available must be revised or the methods of scoring changed before they are satisfactory for testing immigrants, it appears from a report of Dr. Lawrence Kolb, senior surgeon of the U. S. Public Health Service, before the meeting of the American Association for the Study of the Feebleminded.

The law now provides that no mental defectives shall be admitted to this country. But although psychologists have devised special tests which do not require the use of language, the scores on these tests do not give a true picture of the mental ability of the person tested, Dr. Kolb found. His conclusion is based on the results of tests given to 3,000 persons desiring to enter this country from Europe.

Men do conspicuously better on these non-verbal, or performance tests than do women, although there is no reason to suppose that the men are more intelligent than the women. Children able to read and write do the tests as well as their illiterate mothers, and, because of the difference in age attain a higher intelligence quotient, which is mental age divided by actual age. Young adults do better than older adults. And the difference between the illiterates and those who can read is very high.

These facts seem to indicate that ability on the tests depends to some extent at least upon the stimulating character of the environment and upon the education as well as upon innate capacity which they are supposed to measure, Dr. Kolb believes.

Science News Letter, June 11, 1932

SOCIOLOGY

Depression and Race Suicide Are Blamed on Rush to City

ECONOMIC problems such as the present depression, as well as sociological problems like race suicide, may have their origin in the recent rush of people to large cities, it was pointed out by an address of Dr. Clarence G. Campbell, president of the Eugenics Research Association.

The city population of the United States was greater than the rural population by 5.8 per cent. in 1920, but by 1930 the excess had jumped to 28.3 per cent., Dr. Campbell told the meeting. This change in the population has been associated with important economic changes, he pointed out.

If prices and production in both city and country were so arranged that the city dwellers used all the produce of the country and paid sufficient to enable the rural population to absorb all the urban manufactures, then all would be well, he said.

"But suppose on the other hand that the urban community, from some cause, places a higher relative value upon its products and its services, and takes the arbitrary stand that the total rural products are only equivalent in value to two-thirds, say, of its own total production. For a time it might continue to produce this excess third, under the impression that the rural community, or parties unknown, would come forward with something to exchange for it. But it would before long cease to produce this superfluous third which it could not exchange, and the urban element concerned in this production would be without employment and without means to exchange for its substance."

Such a situation, Dr. Campbell said, leads to the condition with which we have become familiar of great surpluses, both of urban and of rural products, which can find no market for their exchange, and of great numbers of able individuals who cannot be employed.

Science News Letter, June 11, 1932

ECONOMICS

Rubber Cheaper Than Wood Used for Kindling in England

RAW RUBBER now selling for less than kindling wood is being used to light open fires in many British homes. Cut into strips, one pound of rubber costing about five cents will serve to kindle seven or eight ordinary fires. Although not generally realized, crude rubber burns easily without any offensive smell. The British owners of rubber plantation stocks are encouraging the use of rubber in starting the coal fires of England in order to dispose of the excess that has depressed the price below the cost of production.

Science News Letter, June 11, 1932

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BIRTH OF AN INDUSTRY

This little model typifies the beginning of the great artificial silk industry. It will actually make threads of artificial silk. Early views of the discovery that it takes advantage of are discussed by Chardonnet, the famous chemist, in Classic of Science, SNL No. 500.

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BOTANY

NATURE RAMBLINGS
by Frank Thone

Poison Ivy

AMERICA has a monopoly on many things that give us a right to be proud. But in poison ivy we have a hundred-per-cent. American product that we have no call to boast about at all. This troublesome weed with the poisonous leaves is found in one form or another, over the greater part of the country, and many and ill are the consequences to those luckless susceptibles who run afoul of it.

"Leaflets three—let it be!" That was the botanical identification and the warning our grandparents knew. And the word is still good. The leaves of the poison ivy are quite distinctive among other vines and low shrubs, in their division into three broad parts.

The poisonous principle of the poison ivy is a heavy, non-volatile, oily substance, chemically related to phenol, or carbolic acid. It can be picked up only on contact, and does not "fly with the wind" as at one time supposed. But the slightest contact will suffice for those sufficiently sensitive to poison ivy, which probably accounts for the widespread notion of its powers to harm at a distance.

Hundreds of remedies have been proposed for ivy poisoning, but the U. S. Department of Agriculture has settled down to two or three that work practically every time. One of these is a five per cent. solution of potassium permanganate, washed on the sore places with a little cotton or a soft cloth. This makes a brown stain on the skin, which may be removed with a one per cent. solution of oxalic acid.

The U. S. Department of Agriculture has a bulletin on poison ivy, which it will send free of charge to any one asking for it. It is listed as Farmers' Bulletin 1166-F.

Science News Letter, June 11, 1932

CHEMISTRY

Research at Work to Restore Usefulness of King Corn

IN THE MIDDLE-WESTERN states where corn is king a movement is under way to restore to higher estate this most voluminous and valuable of all agricultural crops. It is not a farmer's rebellion but a chemical attack, aimed at discovering new ways of using the two and a half billion bushels of corn that grow on American soil annually.

Large varieties of starches, sugars, oils and other products flow out of the corn kernel into industry and homes. The farm is still the largest factory in the world, manufacturing pork, beef, dairy products, poultry and eggs out of corn.

But the demand for the products of corn has fallen off. The average American eats 11 pounds less meat each year than he did thirty years ago. We like leaner meat and stockyards do not want fat hogs. Lean hogs eat less corn. Lard's market has been usurped by vegetable oils, and even corn oil competes with the fat of pigs fed on corn. Prohibition stopped the legal making of whiskey from corn.

Corn refineries manufacture each year nearly a billion pounds of corn sugar, over a billion pounds of corn syrup, more than a hundred million pounds of dextrin and 800 million pounds of corn starch. Makers of textiles, paper, adhesives and other things use corn starch while housewives starch collars and make corn starch pudding.

The industry of corn refining uses 75 million bushels of corn, each containing 30 pounds of starch. Dr. H. E. Barnard, chemist and director of the newly created Corn Industries Research Foundation, sees starch as perhaps the most important of all the basic materials used by the chemist. And he calls it the most unknown substance in the world.

If chemists studied starch as assiduously as they have coal tar, the problem of too much corn at too low a price might be solved through the discovery of new uses.

Science News Letter, June 11, 1932

MEDICINE

Examinations of Blood Cells Show Progress of Tuberculosis

DETERMINATION of the total number of each of certain kinds of cells present in the blood of tuberculous patients is as important as X-ray findings and general signs and symptoms for telling whether the patient is getting better or worse, it appears from a discussion before the National Tuberculosis Association at its recent meeting in Colorado Springs.

Evidence that the disease is spreading in the body is often first shown by the blood count, it was stated. The X-ray shows the spreading second, and the symptoms show it last. The significant changes are sufficiently definite to be detected in ordinary examination of the blood by any well trained technician or physician.

For watching the progress of the disease in this way, it is the white blood cells that are important. There are several kinds of these cells which include the scavenger cells and the cells that help the body resist infection. From careful examination of the blood and of the general changes in the body, these investigators have found that one kind of white cell is more numerous at one stage of the disease and another kind at another stage. Since they also know whether these stages represent improvement or the reverse, they have been able to correlate the count of the blood cells with the progress of the disease. While the blood count is as important as the X-ray and the clinical symptoms in determining the progress of the disease, it is held to be no more important.

Science News Letter, June 11, 1932

First Glances at New Books

Anthropology

SPENCER'S SCIENTIFIC CORRESPONDENCE WITH SIR J. G. FRAZER AND OTHERS—Edited by R. R. Marett and T. K. Penniman—*Oxford University Press,* 174 p., $3. Introducing this collection of letters, the editors say that they have no apologies to make, though they realize that the scientific facts have mostly appeared in final form in the works of the men here quoted. The editors point out the value of understanding the methods by which scientists arrive at the truth, as well as the truth discovered. In the letters which passed between Spencer in the field studying primitive tribes and Frazer at home in England, the reader watches two master minds going over their problems, conferring with one another, and gaining new inspiration each from the other.

Science News Letter, June 11, 1932

Science-Engineering

PROFITABLE PRACTICE IN INDUSTRIAL RESEARCH—Edited by Malcolm Ross, Maurice Holland and William Spraragen—*Harper,* 269 p., $4. Leaders in the research that is remaking the civilization around us tell how industry may benefit from searches after new scientific truths. In ten years the number of industrial research laboratories has increased from five hundred to sixteen hundred. The experiences set forth in this volume will aid other industries which will find it necessary to conduct research in order to keep up with the parade of civilization.

Science News Letter, June 11, 1932

Nutrition

CHILD FEEDING—Bengamin Gayelord Hauser—*Tempo,* 130 p., $2.50. Mr. Hauser puts forth his faddish ideas about diet in a very attractive form. It is to be hoped that too many mothers will not be misled thereby.

Science News Letter, June 11, 1932

Nescience

WILD TALENT—Charles Fort—*Kendall,* 343 p., $3. The blurb of this classic of the unscientific method says: "Wild Talents are those latent, magical powers in man which have been neglected or imperfectly controlled, and have for that reason been only sporadically or aimlessly useful. Charles Fort sees in their development the coming era of witchcraft, the sorcery of the future." Setting himself up as the foe of science, the author gathered from hither and yon a large number of old wives' tales, ancient and modern, and uncritically embalmed them in this book. Mr. Fort's career as an anti-scientist had a sad ending. His obituary in the New York *Times,* May 5, tells us that he had been ill for a year with an acute enlargement of the heart and had refused to consult a physician because of his distrust of men of science.

Science News Letter, June 11, 1932

Zoology—Comparative Psychology

THE SOCIAL LIFE OF MONKEYS AND APES—S. Zuckerman—*Harcourt, Brace,* 356 p. 24 pl., $3.75. The anatomist to the Zoological Society of London has been watching the doings on Monkey Hill for a long time. What he has seen there, and gathered from other sources as well, would rather seem to indicate that a good many things we commonly attribute to "human nature" ought rather to be credited to "primate nature." Only poor Jocko, with his short memory and apparently even shorter powers of anticipation, isn't so much bothered with inhibitions as we are.

Science News Letter, June 11, 1932

Nature Study

HUNTING—Edith M. Patch and Harrison E. Howe—*Macmillan,* 161 p., 80c. The "hunting" described in this book is of the harmless kind done by small children: all the game gets off alive and the hunters bag only useful knowledge about the world they live in. The book constitutes the first of a new series of elementary science readers produced by the collaboration of a successful writer of children's books and a leading scientist.

Science News Letter, June 11, 1932

Industry

A WONDER BOOK OF RUBBER—*B. F. Goodrich Co.* "This booklet is not offered as a scientific discussion, but only as a story of rubber and the manufacture and use of rubber products."

Science News Letter, June 11, 1932

Vocational Guidance

JOBS FOR THE COLLEGE GRADUATE IN SCIENCE—Edward J. V. K. Menge—*Bruce,* 175 p., $2. It is estimated that there are more than 4,500,000 boys and girls in high schools, colleges and other institutions of higher learning in the United States, who are wondering what the future is to bring them in the way of life work. The purpose of this book is to aid these students and their parents to decide what kind of work they hope to undertake after graduation.

Science News Letter, June 11, 193

Seismology

INTRODUCTION TO THEORETICAL SEISMOLOGY: PART II, SEISMOMETRY—F. W. Sohon—*Wiley,* 149 p., $2.75. Those scientists who set sensitive instruments running day and night to detect the growing pains of the earth will welcome this book on fundamental principles prepared by Father Sohon while he was director of the Georgetown Seismological Observatory.

Science News Letter, June 11, 193

Archaeology

CONTRIBUTIONS TO AMERICAN ARCHAEOLOGY, Volume I, numbers 1 to 4.—*Carnegie Institution of Washington,* 157 p., 67 pl., cloth $5, paper $4. Four comprehensive papers on Mayan archaeology make up this first volume in a new scientific series. The papers are "Excavations at Baking Pot, British Honduras," by Oliver Ricketson, Jr.; "Maya Astronomy," by John E. Teeple; "The Temple of the Wall Panels, Chichen Itza," by Karl Ruppert; and "Notes on the Metates of Chichen Itza, Yucatan," by Gustav Stromsvik.

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Library Science

LIST OF BOOKS FOR SCHOOL LIBRARIES OF THE STATE OF OREGON—Compiled by Anna G. Hall—*Oregon State Library,* 231 p., 40c. This helpful annotated list of books for elementary schools, arranged by subject, is intended to supplement school work, as well as to encourage outside reading. It was issued for use by teachers, but parents will also find it useful for reference.

Science News Letter, June 11, 193

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